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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,145	04/14/2004	Daniel James Winarski	TUC920040007US1	7857

7590 01/31/2007

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EXAMINER	
KROFCHECK, MICHAEL C	
ART UNIT	PAPER NUMBER
2186	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/825,145	WINARSKI ET AL.	
	Examiner	Art Unit	
	Michael Krofcheck	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *4/14/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment filed on 9/13/2006.

2. The abstract, and claims 1, 6, and 15 have been amended.

3. The objections/rejections from the prior correspondence not restated herein have been withdrawn.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 15-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 15-18 is not limited to statutory subject matter. In view of the applicant's disclosure, specification page 18, paragraph 00049, the medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g., volatile and non-volatile memory) and intangible embodiments (e.g., signals propagating through space, radio waves, infrared signals). As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

An article of manufacture is an article that is produced from raw or prepared materials, such as a compact disc. Signals propagating through space are not built by combining raw or prepared materials.

The examiner suggests amending claim 15 to read, "An article of manufacture comprising a ***computer readable medium*** tangibly embodying..." to overcome the rejection since in paragraph 0049 of the specification, the computer readable medium group is independent of the non-statutory transmission media group, thus the claimed invention would not include the transmission media.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-3, 5-8, 10, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopsaftis, US patent 5659801, Torrey et al., US patent application publication 2003/0084240, and Jantz, US patent 5867736.

10. With respect to claims 1 and 6, Kopsaftis teaches of a method for updating microcode, comprising the steps of: assigning a first LUN to a first device (fig. 1; column 5, lines 29-37; where the commands directed to the disk drive, 10 are received by the bus interface as they contain the same LUN as stored in the bus interface. Thus the disk drive device must have been assigned a LUN);

said first device receiving one or more commands (fig. 1; column 5, lines 29-37; where the commands directed to the disk drive, 10 are received by the bus interface as they contain the same LUN as stored in the bus interface);

said first device obtaining a LUN address from each of said one or more commands (fig. 1; column 5, lines 29-37; where the commands directed to the disk drive, 10 are received by the bus interface as they contain the same LUN as stored in the bus interface); and

Kopsaftis fails to explicitly teach of assigning a second LUN to a memory. However, Torrey teaches of assigning a first LUN to a first device; assigning a second LUN to a memory (fig. 2; paragraph 15-16; where the library is LUN 1-0 or LUN 0 and the drives may be LUNs 1-1, 1-2, or LUNs 1, 2);

wherein said first LUN and said second LUN are separate (fig. 2; paragraph 15-16; as the library has a LUN and the drives have different LUNs they are individually distinguishable and thus separate)

said first device obtaining a LUN address from each of said one or more commands (fig. 3; paragraph 19-20)

The combination of Kopsaftis and Torrey teaches of in response to said LUN address obtained from each of said one or more commands being equal to said second LUN, updating said microcode in said memory using said LUN address assigned to said second LUN by processing each of said one or more commands processing each of said one or more commands to update said microcode in said memory (Kopsaftis, fig. 1, 3; column 5, lines 29-37, column 8, line 63-column 9, line 2; Since in the combination, teach command contains the LUN of where it is applied (Torrey paragraph 19-20) the initiator command and subsequent microcode upgrade commands would contain the LUN for the appropriate memory).

It would have been obvious to one of ordinary skill in the art having the teachings of Kopsaftis and Torrey at the time of the invention to assign the different types of storage in Kopsaftis different LUNs as taught in Torrey. Their motivation would have been to facilitate control of multiple devices and assist in upgrades Torrey (paragraphs 4-5).

11. With respect to claim 2, Kopsaftis teaches of in response to said LUN address obtained from each of said one or more commands being equal to said first LUN,

processing each of said one or more commands as input/output commands of said first device (fig. 1; column 5, lines 29-37, 47-62).

12. With respect to claim 3, Kopsaftis teaches of in response to said first device receiving a prepare for microcode update command, placing said first device is a operational state to receive said update of said microcode (column 8, lines 63-65).

13. With respect to claim 5, Kopsaftis teaches of wherein said processing each of said one or more commands to update said microcode further comprises: overwriting a memory associated with said first device with an updated microcode (fig. 3, item 236; column 10, lines 25-37).

14. With respect to claim 7, Kopsaftis teaches of a host, wherein said host sends microcode update commands to said first device (fig. 1; item 20; column 1, lines 25-29, column 3, lines 32-43).

15. With respect to claim 8, Kopsaftis teaches of a host (fig. 1; item 20; column 3, lines 32-43); and

a device interface coupled to said host wherein said device interface receives commands from said host and transfers said commands to LUN addressable components (fig. 1; item 40; column 3, lines 32-43; column 3, line 66-column 4, line 3; as the commands are sent to the disk drive (LUN addressable components) from the host, it must be done through the SCSI interface as it is the only connection between the two).

16. With respect to claim 10, Kopsaftis teaches of wherein said memory is coupled to said first device (fig. 1, items 108, 10; where the memory 108 is connected to the bus

interface and all the other components of the disk drive, thus being coupled to the disk drive (first device)).

17. With respect to claim 12, Kopsaftis teaches of a second device removably attached to said first device, wherein said memory is coupled to said second device (fig. 1; item 60; where the SCSI bus, 60, is attached to the disk drive. It is abundantly clear to one of ordinary skill in the art that the bus is removably attached to the disk drive, as disk drives the cables connecting them to the bus can be disconnected from the each other in a computer. As such the non-volatile memory, 108 is attached to it through the bus interface).

18. With respect to claim 13, Kopsaftis teaches of a controller for operating said first device, wherein said memory is coupled to said controller (fig. 1; items 106, 112).

19. With respect to claim 14, Kopsaftis teaches of wherein said system is an automated data storage library (fig. 1).

20. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopsaftis and Torrey as applied to claim 1 above, and further in view of Shirasawa et al., US patent application publication 2002/0166027.

21. With respect to claim 4, Kopsaftis fails to explicitly teach of not accepting any new commands for processing; completing all current commands; and placing movable components at a rest position. However, Shirasawa teaches of wherein said placing said first device is a operational state to receive said update of said microcode further comprises: not accepting any new commands for processing; completing all current commands (fig. 3, paragraph 0038-0039; where the I/O process to the hard disk A is

stopped. It is abundantly clear to one of ordinary skill in the art that the command currently being executed are finished as if they were abruptly stopped, that can result in corrupting the data on the drive); and

placing movable components at a rest position (fig. 3, paragraph 0038-0039; It is abundantly clear to one of ordinary skill in the art that as all access to the drive has stopped and that a reboot of the drive will be necessary upon completion of the firmware update, initially powering down the spindle motor, arm, etc. would conserve considerable power while the firmware is being updated).

It would have been obvious to one of ordinary skill in the art having the teachings of Kopsaftis and Torrey, and Shirasawa at the time of the invention to enable the transferring of I/O processing to another drive when updating the firmware of a specific drive in the combination of Kopsaftis and Torrey as taught in Shirasawa. This would enable current I/O processing to continue uninterrupted (Shirasawa, paragraph 0012).

22. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopsaftis and Torrey as applied to claim 6 above, and further in view of Pellegrino et al., US patent application publication 2004/0225775.

23. With respect to claim 9, Kopsaftis fails to explicitly teach of said memory is an EEPROM. However, Pellegrino teaches of wherein said memory is an Electrically Erasable Programmable Read Only Memory (paragraph 0030).

It would have been obvious to one of ordinary skill in the art having the teachings of Kopsaftis and Torrey, and Pellegrino at the time of the invention to make the non-volatile memory of the combination of Kopsaftis and Torrey an EEPROM as taught in

Pellegrino as numerous devices have embeded their firmware in EEPROM so that it can be updated, and will not be lost when power is removed from the memory (Pellegrino, paragraph 0030).

24. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopsaftis and Torrey as applied to claim 6 above, and further in view of Abbott et al., US patent 6205093.

25. With respect to claim 11, Kopsaftis fails to explicitly teach of an accessor. However, Abbott teaches of further comprising an accessor, wherein said memory is coupled to said accessor (fig. 2; item 18; column 4, lines 18-35).

It would have been obvious to one of ordinary skill in the art having the teachings of Kopsaftis and Torrey, and Abbott at the time of the invention to store and update the microcode of Abbott in a non-volatile memory as taught in the combination of Kopsaftis and Torrey, implementing the microcode updating method in a tape system as Kopsaftis teaches of the system also using tapes, column 1, lines 6-24. This would simplify the processing of sending separate management and data I/O commands over the same interface in the tape system and provide increased speed by using a solid state memory over a disk drive to store the microcode in.

26. Claims 15-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Kopsaftis, Torrey, and Burton et al., US patent 6393535.

27. With respect to claim 15, the combination of Kopsaftis, Torrey teaches of all the limitations cited above with respect to claims 1 and 6. Burton teaches of an article of manufacture comprising a data storage medium tangibly embodying a program of

machine-readable instruction executed by a processing apparatus to perform method steps (column 9, lines 35-53).

It would have been obvious to one of ordinary skill in the art having the teachings of Kopsaftis, Torrey, and Burton at the time of the invention to implement the method steps from the combination of Kopsaftis and Bolt in the information bearing media of Burton. Their motivation would have been to allow for the process to be easily transferred and implemented on different computer systems.

28. With respect to claims 16 and 17, the combination of Kopsaftis and Torrey teaches of the limitations cited with respect to claims 2 and 3 respectively.

29. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopsaftis, Torrey, and Burton as applied to claim 15 above, and further in view of Shirasawa.

30. With respect to claim 18, Shirasawa teaches of the limitations cited above with respect to claim 4.

31. It would have been obvious to one of ordinary skill in the art having the teachings of Kopsaftis, Torrey, Burton, and Shirasawa at the time of the invention to enable the transferring of I/O processing to another drive when updating the firmware of a specific drive in the combination of Kopsaftis, Torrey, and Burton as taught in Shirasawa. This would enable current I/O processing to continue uninterrupted (Shirasawa, paragraph 0012).

Response to Arguments

32. Applicant's arguments filed 9/13/2006 have been fully considered but they are not persuasive.

33. The applicant argues with respect to the 101 rejection that the claims are statutory because produce a "useful, concrete and tangible result", and that signals propagating through space are statutory. The examiner disagrees. From paragraph 49 of the applicant's specification, the article of manufacture can contain transmission media which includes signals propagating through space. In this instance the functional software is not located on a physical article, and thus is cannot be structurally and functionally interconnected in such a manner as to enable the software to act as a computer component and realize its functionality. Thus if the article of manufacture is transmission media it does not fall into a statutory category and it fails to enable the usefulness to be realized.

The examiner suggests amending claim 15 as mentioned above in the 101 rejection so that the rejection may be overcome.

34. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

35. Applicant's arguments with respect to claims 1, 6, and 15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

37. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

38. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Krofcheck whose telephone number is 571-272-8193. The examiner can normally be reached on Monday - Friday.

40. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

41. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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